EXPERT REPORT ON HISPANIC DEMOGRAPHICS AND THE ESTIMATED CITIZEN VOTING AGE POPULATION OF POTENTIAL VOTING DISTRICTS IN TEXAS

for

The Mexican American Legislative Caucus

by

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August 8, 2011

I declare the following:

1)   My relevant experience and qualifications

My name is Jorge Chapa and I have more than thirty years of experience working with

data from the U.S. Census Bureau and assessing how that data can be used accurately and

reliably.   Since 1989, I have been conducting research on minimizing Census underenumeration

in Texas colonias. These are areas with high concentration of Hispanics living in areas that are

difficult to enumerate. I was a member of the U.S. Bureau of the Census Advisory Committee

on the Hispanic Population from 1994 through 2002. In that capacity, I met regularly with top

Census administrative and technical leaders to be briefed and to comment on all aspects of the

2000 Census, including the preliminary design and implementation plans for the American

Community Survey.   For my service on this advisory committee, I was awarded the U.S.

Bureau of the Census Certificate of Appreciation in 2002 and the U.S. Bureau of the Census

Certificate of Recognition in 2003.

From 2004 through 2006, I was a member of the National Research Council Panel on

Residence Rules in the Decennial Census ("NRC"). This panel issued the report titled *Once and*

Only Once, and In the Right Place: Residence Rules in the Decennial Census, which was

published by the National Research Council of the National Academies of Science. The

following describes the mission and goals of the NRC:

> *The National Research Council (NRC) is part of a private, nonprofit institution*
>
> *that provides science, technology and health policy advice under a congressional*
>
> *charter. The mission of the NRC is to improve government decision making and*
>
> *public policy in matters involving science, engineering, technology, and health.*
>
> *The NRC is committed to providing elected leaders, policy makers, and the public*
>
> *with expert advice based on sound scientific evidence. The NRC does not receive*
>
> *direct federal appropriations for its work. The work is made possible by 6,000 of*
>
> *the world's top scientists, engineers, and other professionals who volunteer their*
>
> *time without compensation to serve on committees and participate in*
>
> *activities.(http://sites.nationalacademies.org/nrc/index.htm)*

I was also a member of the editorial board of the Encyclopedia of the U.S. Census,

published by Congressional Quarterly Press in 2000.   I have written many other publications,

made many professional presentations and also developed computer programs involving the

appropriate analysis and use of U.S. Census data.

I have been an expert witness and have given sworn testimony or been deposed in several

voting rights cases in federal and state courts.   Since 2001, I have been involved in the following

cases:

> *United States of America v. The Euclid City School Board of Education.*
> U.S. District Court, Northern District of Ohio, Eastern Division 2009;
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> *Gonzalez v. Yes on Proposition 200.* U.S. District Court for Arizona, 2007-08;

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Gonzalez et al. v. City of Aurora et al. U.S. District Court for Northern Illinois, 2004;

Session v. Perry (U.S. District Court for Eastern District of Texas), 2003;

Balderas v. Perry (U.S. District Court for Eastern Texas), 2001; and,

Del Rio v. Perry (Texas State District Court, Austin), 2001.

Currently, I am the Director of the Center on Democracy in a Multiracial Society at University of Illinois at Urbana Champaign. I also serve there as a Professor of Sociology and Latina/Latino Studies. Moreover, before moving to the University of Illinois, I was Professor of Latino Studies and Adjunct Professor of Educational Policy and Leadership, Latin American Studies, Public and Environmental Affairs, and Sociology at Indiana University, Bloomington. Finally, I started my academic career as a professor at the Lyndon B. Johnson School of Public Affairs at the University of Texas at Austin, where I was also a Faculty Associate of the Population Research Center. Among many other courses, I taught graduate level courses in Applied Statistics. Please see my attached CV.

I was asked by Mexican American Legislative Caucus to analyzes the following issues: 1) the size, distribution and other demographic characteristics of Texas' Hispanic population in the year 2010; 2) whether demographic evidence shows that Hispanics in Texas still show the effects of past discrimination which hinders their ability to participate effectively in the political system; 3) how relevant socioeconomic characteristics relate to proposed redistricting plans; 4) the proportion of Hispanic Citizen Voting Age Population (HCVAP) compared to the total Citizen Voting Age Population (CVAP) in selected districts in various plans; and, 5) the impact of Census underenumeration on these issues.

I relied on the following information in the preparation of this report: Census data; information from the Texas Elections Database; newspaper articles; information from the Texas State Data Center; interviews with local knowledgeables, a few relevant academic materials

listed in the bibliography; and my published works. I am being compensated at the rate of $175 per hour for my work. My compensation is not dependent upon the conclusions I draw in this report.

2)   The Size and Distribution of Texas' Hispanic Population

Texas' population grew very rapidly between 2000 and 2010. The 2010 Census count for Texas showed that the population had increased by 4,293,741. Perhaps even more striking is the fact that 2,791,255 or 60% of this total increase was due to the even more rapid growth of Texas' Hispanic population. (See Table 1.)   In 2010, more than 1 out of every three Texans was a Hispanic. The non-Hispanic population increased by 1,535,549.   The size of the population and/or their high concentrations show that Hispanic are a significant part of the population of the individual counties shown in Table 1.

3)   Demographic Evidence that Hispanics in Texas still show the effects of past discrimination

Tables 2 and 3 show that Texas Hispanics do indeed have lower levels of both education and income when compared to non-Hispanics.   I know through my past study of the socio-economic characteristics of Hispanics and non-Hispanics in Texas that these income and education disparities have persisted throughout the 20th Century. The levels of education and income for "Texans ages 25-64" includes U.S.-born Texans as well as foreign-born Hispanics. Typically, immigrants do have low levels of education and earnings. But examining the same information for "U.S.-born Texans ages 25-64," and "Texas-born Texans ages 25-64," show that Hispanics of both groups have substantially lower educational attainments, income and earnings than the comparable group of non-Hispanic Texans.

Tables 4, 5, and 6 show that Hispanics have lower educational attainment levels, income levels and higher poverty rate in each of the counties with large Hispanic populations.   It was possible to get the information on per capita income in Table 5 for the Total Population, for Hispanics and for White non-Hispanics. The differences between Hispanics and non-Hispanic

whites are quite large. There is an extensive historical literature that documents the history of

discrimination against Hispanics in Texas. The tables presented in this section provide strong

evidence that Hispanics have not achieved parity with non Hispanic Texans that this

discrimination still has an strong present day impact on the education, income and earning of

Hispanic Texans.

4)   Estimating Citizen Voting Age Population in 2010

The U.S. Constitution mandates a decennial enumeration of the population. Additionally,

many federal laws and programs mandate or require that the Census collect information about

the social, economic, demographic, and housing characteristics of the population.

Several of the Censuses conducted in the twentieth century, including the 2000 Census,

consisted of a "short form," which included basic questions about age, sex, race, Hispanic

origin, and household relationships, and a "long form," which included the basic "short-form"

questions but also detailed questions about as ancestry, bedrooms in housing unit, citizenship,

educational attainment, income, heating fuel, journey to work, kitchen facilities, language spoken

at home, occupation, plumbing facilities, and vehicles available as well as other population and

housing characteristics. The short form information was intended to be collected from every

household in nation. The long form was intended to be collected from a sample of about one-

sixth of the nation's households.

The American Community Survey (ACS), is a new nationwide, continuous survey

designed to provide up-to-date and reliable demographic, housing, social, and economic data

every year. The ACS will replace the decennial Census long form in 2010 by continuously

collecting long-form-type information throughout the decade, rather than only once every 10 years.[1]

The ACS is administered to 250,000 households each month for a total of three million a year.   The survey sample is drawn in a manner to include the entire country evenly. The ACS sample is designed to permit the responses to be cumulated over different geographic areas and different time intervals for different purposes. The ACS is conducted by mail, by telephone, and by personal visits.[2]

a)   Advantages of the American Community Survey

The ACS has several advantages over the data that has previously been collected on the decennial Census long forms. The main benefit is that the ACS will deliver necessary data updated every year, instead of every 10 years. Federal, state, and local governments rely on demographic, housing, social, and economic data in their budgeting and planning processes. Also, many governmental funds are annually distributed on the basis of these demographic and economic characteristics. ACS data will make it possible to allocate these funds based on recently collected data, rather than data that could be up to 10 years old. Population size and characteristics can change significantly over a decade. So, the ACS provides information that is much more current and, thus, much better able to reflect existing conditions.

b)   Multi-year estimates from the American Community Survey

The ACS sampling procedures are designed to collect annual population estimates for counties, cities, and other areas with populations of 65,000 or more. Many towns and places

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[1] *U.S. Census Bureau, A Compass for Understanding and Using American Community Survey Data: What General Data Users Need to Know* [hereafter referred to as *Compass*], U.S. Government Printing Office, Washington, DC, p. 1 (2008).

[2] *A Rolling Sample Survey for Yearly and Decennial Use,*
http://www.census.gov/acs/www/Downloads/Bibliography/HelsinkiF.doc; About the ACS: Data Collection, http://www.census.gov/acs/www/SBasics/DataColl.htm.

have populations smaller than this annual estimate sampling threshold. For these areas, the ACS

sample is designed to permit several years of data to be pooled together to create reliable multi-

year estimates.   For the Census areas known as census tracts and block groups, the ACS

sampling procedure was designed so that data could be *cumulated* over five successive years to

estimate the characteristics of these areas.[3]   Census tracts and block groups also the smallest

areas for which long-form data had previously been tabulated.[4]

The ACS has several advantages over the old decennial Census long form method. First,

the ACS delivers data updated every year rather than every 10 years. Federal, state, and local

governments rely on demographic, housing, social, and economic data in their budgeting and

planning processes. Also, many governmental funds are annually distributed on the basis of

these demographic and economic characteristics. ACS data allow the allocation of these funds

based on recent data, rather than data that could be up to10 years old.

Like any sample survey, ACS data is better suited to calculating the *proportion* of the

population with a given characteristics rather than the actual number. The following note is

included with ACS tables generated from the Census website:

> *Although the American Community Survey (ACS) produces population,*
>
> *demographic and housing unit estimates, it is the Census Bureau's Population*
>
> *Estimates Program that produces and disseminates the official estimates of the*
>
> *population for the nation, states, counties, cities and towns and estimates of*
>
> *housing units for states and counties.*

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[3] *U.S. Census Bureau, Compass*, p. 3-4.

[4] *U.S. Census Bureau, Compass*, p. 3. In addition to geography like states, counties, and places, the Census Bureau also releases data at smaller levels of geography that have no independent meaning. These include, in descending order of size, Census Tracts, Census Block Groups, and Census Blocks.

c)   **Decennial Census Data on Citizen Voting Age Population**

The Decennial Census forms the basis of reapportionment (redistribution of US House of Representative seats among the states based on population) and provides some basic data for redistricting and other governmental uses. The Census, conducted by the Census Bureau, collects basic demographic information – place of residence, age, gender, race, Latino ethnicity, and household relationships – and is sometimes referred to as a 100% count because it tries to collect this information about every individual in the United States. The Census produces data on total population and voting age population, as well as measures of total and voting age population for various racial groups and Latinos. In the redistricting context, these population data are often referred to as "PL data" or "PL 94-171 data" due to the federal law that requires the Census Bureau to provide them to the states for use in redistricting.

Unlike the Census, the ACS does not collect, nor is it intended to provide, a count or enumeration of the population. The ACS is intended to provide information about the distribution of characteristics in a population, such as educational attainment or number of rooms in one's home. Because it is based on a sample of the population, rather than a total count, the ACS provides population estimates, which are subject to sampling error. Although the ACS reports data as an estimated number of individuals in a given area that display particular characteristics (often called a point estimate), this number is not the same as a number reporting Census-derived counts. Rather, it is an estimate of the population, which the ACS provides along with an estimate of margin of error (MOE). The point estimates and MOEs are provided at the 90% confidence level; this means that if the same questions were asked 100 times of a random sample of individuals in the same area, in 90 of those 100 times, the answer would fall within the range of the point estimate plus or minus the margin of error. For example, if the

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population in a county that does not have indoor plumbing is estimated to be 100 individuals, with a margin of error of 23, this means that 90 times out of 100 that a random sample of people in the county is asked about plumbing, the population of outhouse users will be between 73 and 123 people. The ACS data reported about citizenship, from which CVAP numbers are derived, are an estimate of citizen population in different geographic areas, each with their own margins of error.

In addition to ACS data, in February 2011, the Census Bureau released a dataset containing CVAP figures for various racial groups and Latinos at the behest of the US Department of Justice; this dataset is commonly referred to as the DOJ Special Tabulation. The Census Bureau used ACS data to perform the DOJ Special Tabulation, which provides CVAP point estimates by race and Latino status at various levels of geography, down to the Census Block Group in many areas.

d) Challenges for Using ACS data for Redistricting

First, ACS data are not publicly available at the smallest units of geography that line drawers usually use in redistricting. Redistricting often entails putting small units such as Census Tracts, Block Groups, or Blocks together to form districts. Census data are available and reliable at all these levels, including the Census Block (the smallest unit of Census geography). However, ACS data are never reported at the Census Block level, and are reported at the Block Group and Tract level only by aggregating five years of ACS responses. Because of the very small sample and perhaps for privacy concerns, the Census Bureau does not release ACS data at the Census Block level.

Second, ACS data are often less reliable for smaller geographical units than they are for larger units of geography. This is because the samples drawn from smaller units of geography

are generally smaller than those of larger units, and as a general rule of thumb in statistics, smaller samples tend to generate larger margins of error than large samples. Even with aggregated data, block group estimates sometimes contain large margins of error. ACS and DOJ CVAP estimates for block groups come from smaller samples than CVAP block group estimates previously calculated using long form data because long form data sampled equaled approximately 16% of a block group, compared to a 5% for the five-year ACS data. Therefore we can expect that the 2010 CVAP estimates at the block group level will have larger MOEs than did the 2000 estimates. In addition, in some cases where the population samples are very small, the Census Bureau may suppress the data and not release it at all, in order to protect individual privacy interests. This makes Block Groups look like they have no population when they may in fact contain population, but at small numbers.

Third, since the ACS estimates available at smaller geographic units are based on data collected over a 5-year period, they likely underestimate the CVAP population today (or on April 1, 2010 when Census data were collected) because the Census Bureau takes no steps to "update" data. Most notably, the ACS does not account for aging of the population sampled, but rather reports them at the age they were when data were collected. Accordingly, a citizen who was 13 in 2005 when the ACS collected information about her still appears as a 13-year-old even though in reality she is now over 18 and of voting age. This has a particularly strong impact on racial/ethnic groups that have higher rates of citizenship among children than adults, such as Latinos and Asian Americans.

Table 7 demonstrates the differences in CVAP estimates between those based on the DOJ Special Tabulation based on a cumulative sample collected over 5 year and the estimates based on ACS data collected in each year between 2005-2009. The figures for each individual year

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show that the number and proportion of the Hispanic CVAP population has increased each year.

In contrast, the non-Hispanic white population increased in number but the proportion has

decreased.   Moreover, comparing HCVAP estimates in the 5-year DOJ data with the most

recent available 1-year data (2009) shows that that 2009 figure (3,944,088) is more than 7% of

figure reported in the DOJ Special Tabulation (3,674,800).

The figures contained in the Special Tabulation are the basis for the CVAP estimates

published by the Texas Legislative Council.[5] Table 7 shows that the Special Tab substantially

underestimates the HCVAP number and proportion in 2009.

The DOJ and aggregated five-year ACS estimates are therefore a data source that may

mislabel some voting age citizens as either too young or under their previous non-citizen status,

as ACS data are not corrected for naturalization. As such, ACS estimates are best considered a

conservative estimate of citizenship rates and CVAP; the actual rates are likely higher due to the

natural aging of the population, the higher rate of citizenship among Latino and Asian children as

opposed to adults, and the low mortality rate among teenagers versus older individuals. That is,

large numbers of citizen children and teenagers are reaching voting age. The fact that 2010

HCVAP estimates that will be presented in this report are higher than those published by the

Texas Legislative Council are simply the result of updating the 2005-2009 estimates with 2010

population counts.

Finally, ACS data pose a challenge for redistricting that must be addressed because they

are reported using different geographical units than 2010 Census (PL 94-171) data. The Census

geography used to report data (Tracts, Block Groups, Blocks) can change between Censuses. As

a result, data from the same physical address could be reported in one Census Tract in 2000 and

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[5] http://www.tlc.state.tx.us/redist/pdf/CitizenshipAddendum.pdf

a different Tract in 2000. Unfortunately, ACS data are currently reported using 2000 Census

Geography, while Census data are reported using 2010 Census geography. For redistricting, line

drawers will use 2010 Census geography, possibly rendering ACS and DOJ data reported on

2000 Census geography inaccurate. Where the 2000 and 2010 Census geographies are different,

additional steps are needed to bring the ACS data into 2010 Census geography.

e)   Method to use ACS to Calculate CVAP

Because of the issues identified above, ACS data reports, as well as tabulations based on

them such as the DOJ Special Tabulation, should undergo additional analysis in order to be

useful and reliable for redistricting. What follows is a method to use publicly available Census

data and ACS data, in order to develop a reliable, albeit conservative, estimate of CVAP for

various population groups at the smallest level of geography for which the necessary data are

available; i.e., the census tract.

Since several aspects of a population can change in between the period (2005-2009) over

which ACS data were collected and the time the Census enumeration occurs in 2010, we argue

that the best use of ACS data is to establish a ratio or rate of citizenship. This citizenship ratio,

in turn, is applied to 2010 Census data to produce estimated CVAP population using the most

up-to-date data that is reliable at small geographical units. This method produces a conservative

estimate of CVAP populations since the ratio does not directly correct for the age issues

mentioned above or other issues that affect the accuracy of CVAP data. Accordingly, a

determination of 50% or more CVAP estimated under this method should be sufficient to satisfy

the first *Gingles* precondition that a minority is sufficiently large and compact to constitute a

majority in a single member district.

This method has several benefits as well. First, by using ACS data to develop a fraction or ratio of citizenship, it is a more appropriate use of ACS data than using its point estimates as if they were an absolute count. ACS point data are best used as descriptors of the population rather than a tally or count. Using these data in combination with Census PL 94-171 data to determine rates of voting age citizenship for various populations is a proper use of ACS data. Second, by applying the CVAP ratio or fraction to 2010 Census data, we address some of the shortcomings of ACS data collected over several years. The citizenship rate established with ACS data is applied to 2010 Census voting age population figures to derive an estimate of 2010 citizen voting age population. Accordingly, some of the age issues are addressed.

The procedure that will result in most accurate CVAP rates is one that makes best use of the available information. The smallest area for which CVAP rates can be calculated are census tracts. We use the standard tabulations of the five-year ACS data to calculate these CVAP rates rather than the DOJ special tabulations because the ACS census tract data have both CVAP estimates and VAP estimates. Note that the DOJ tabulation does present data for a different set of racial combinations than does the ACS tabulations.   The DOJ tabulation only presents CVAP estimates. Due to privacy concerns, the Census Bureau did not release VAP estimates at units of geography smaller than the County level in the DOJ Special Tabulation making it impossible to calculate a CVAP ratio for census tracts or block groups. Also, since the ACS samples for tracts are generally larger than those for block groups, tract-level estimates will be more reliable. For general purposes we propose the following steps:

1. Use the five-year compilation of ACS data at the Census tract level to calculate CVAP/VAP ratios.

ACS Tract CVAP/ ACS Tract VAP = ACS Tract-level CVAP Ratio

2. Determine the correspondence between ACS tract data and 2010 blocks. We did this using the Census geographic relationship file available at the following URL:

   http://www.census.gov/geo/www/2010census/t00t10.html .

3. Associate each 2010 block or block portion with a Census tract CVAP/VAP ratio.

4. Apply the ACS Tract CVAP estimate to the 2010 PL Block VAP

   Tract CVAP Ratio*2010 PL Block VAP = 2010 Block CVAP estimates.

5. ACS and DOJ data are presented using geographic boundaries from the Census 2000. PL data are presented in terms of 2010 Census geographies which are different. Most 2010 Census blocks can be identified with one Census 2000 tract and thus it is simply a matter correctly associating each ACS tract CVAP ratio to the geographic area which is now a 2010 block. However, some blocks have been split between two census tracts. In those cases, we used the proportion of the block area within the tract to assign the same proportion of the block's 2010 PL VAP by race to the tract. This information is also available from the geographic relationship files cited above. The resulting VAP estimates for each block or block portion is then multiplied by the Tract CVAP Ratio to estimate the 2010 CVAP estimate for each block portion. In cases where the ACS tract data were suppressed to prevent disclosure of personal information we used the statewide average CVAP Ratio for each group.[6]

These methods were used to calculate the HCVAP estimates presented in Tables 8 through 11. Overall, the HCVAP estimates produced by this procedure are slightly higher than the results of the Texas Legislative Council. However, in some cases they are the same or slightly

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[6] *U.S. Census Bureau, Design and Methodology: American Community Survey* U.S. Government Printing Office, Washington, DC, Pp 13-6 and 13-7, (2009).

lower. These differences reflect the actual population in 2010 rather than the sample drawn

between 2005-2009.

5)   The Impact of Census Underenumeration

The analysis of the accuracy of Decennial Census counts of Texas Hispanics have

typically found that they have substantially underenumerated ; i.e., the reported population totals

were less than the actual totals. Census underenumeration of Hispanics will result in lower

estimates of the Hispanic Citizen Voting Age Population than would result from a complete and

accurate count.   I have analyzed the enumeration practices and procedures of the U.S. Census

Bureau as it conducted the 2010 Census in Hidalgo and Cameron Counties in Texas. This

analysis includes interviews with local elected officials, the staff of local governments, and

community members actively involved with Census-partner organization. I have reviewed

hundreds of relevant documents and records.   This analysis as well as my extensive experience

with Census issues lead me to conclude that the Census Bureau decision to change the procedure

for enumeration of colonia residents shortly before Census Day. April 1, 2010, is a breech of

good practice and common sense. Moreover, it is very likely to increase the magnitude of

underenumeration in these counties. The enumerated Hispanic population in 2010 in these two

counties exceeded one million reseidents. (See Table 1.)   A complete and accurate Census

count of Hispanics in all parts of Texas would very likely result in higher Hispanic Citizen

Voting Age Population counts than presented in this report.

6)   Conclusion

Based on the analysis of presented above, I conclude that Hispanics in Texas are

sufficiently numerous and compact to comprise the majority citizen voting age population of

many Texas electoral districts. I also conclude that Hispanics show disproportionately lower

levels of voter registration and turnout as well as education and income when compared to non-

Hispanics in Texas, which is a clear indication of a legacy of discrimination that directly and

indirectly has prevented their full participation in the electoral process.